

What is claimed is:

1 1. A method for conserving power in a positioning system
2 receiver used in connection with a positioning system providing
3 ranging signals, the receiver using the ranging signals to
4 determine a state of motion of the receiver, the method
5 comprising:

6 a) a step (32) of performing at least a predetermined number of
7 solutions of the state of motion of the receiver using a filter
8 solution based on a mix of models of the motion of the receiver,
9 a mix that is varied from one solution to the next according to
10 a predetermined criteria, and of providing the model mix used in
11 each solution; and

12 b) a step (35) of adopting a partial duty cycle indicating a
13 percentage of time selected receiver components are powered on,
14 based on the mix of models used in successive solutions.

1 2. The method of claim 1, wherein the receiver includes a
2 radiofrequency (RF) front end module and a baseband processor
3 module and further wherein the selected components include the RF
4 front end module.

1 3. The method of claim 2, wherein the selected components also
2 include the baseband processor module.

1 4. An apparatus for conserving power in a positioning system
2 receiver used in connection with a positioning system providing
3 ranging signals, the receiver using the ranging signals to
4 determine a state of motion of the receiver, the apparatus
5 comprising:

6 a) means (15) for performing at least a predetermined number of
7 solutions of the state of motion of the receiver using a filter
8 solution based on a mix of models of the motion of the receiver
9 that are varied from one solution to the next according to a
10 predetermined criteria, and for providing the model mix used in
11 each solution; and

12 b) means (18) for determining a partial duty cycle indicating a
13 percentage of time selected receiver components are powered on,
14 based on the mix of models used in successive solutions.

1 5. The apparatus of claim 4, wherein the receiver includes a
2 radiofrequency (RF) front end module and a baseband processor
3 module and further wherein the selected components include the RF
4 front end module.

1 6. The apparatus of claim 5, wherein the selected components
2 also include the baseband processor module.

1 7. A system, including: a transmitter for transmitting a ranging
2 signal, and a ranging receiver for receiving the ranging signal
3 and for determining a state of motion of the ranging receiver,
4 the ranging receiver characterized in that it includes an
5 apparatus for conserving power that in turn comprises:

6 a) means (15) for performing at least a predetermined number of
7 solutions of the state of motion of the ranging receiver using a
8 filter solution based on a mix of models of the motion of the
9 ranging receiver that are varied from one solution to the next
10 according to a predetermined criteria, and for providing the
11 model mix used in each solution; and

12 b) means (18) for determining a partial duty cycle indicating a
13 percentage of time selected ranging receiver components are

14 powered on, based on the mix of models used in successive
15 solutions.

1 8. The system as in claim 7, further comprising a computing
2 resource external to the ranging receiver, and wherein the
3 apparatus communicates information to the computing facility via
4 a wireless communication system and the computing facility uses
5 the information in assisting the apparatus in performing at least
6 a predetermined number of solutions of the state of motion of the
7 ranging receiver using a filter solution based on a mix of models
8 of the motion of the ranging receiver that are varied from one
9 solution to the next according to a predetermined criteria.